



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent 553-61  
 UNIQUE ID NUMBER: 8RR044  
 COMBUSTOR: Phase5 Tiled  
 ENGINE TYPE: TF

BYPASS RATIO: 7.5  
 PRESSURE RATIO ( $\pi_{00}$ ): 35.2  
 RATED THRUST ( $F_{00}$ ) (kN): 251.9

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.3	17.0	60.7	5.4
AS % OF ORIGINAL LIMIT	1.5	14.4	55.0	29.3
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			68.7	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			78.4	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			87.5	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			100.3	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	2.110	0.02	0.18	40.55	4.3
CLIMB OUT	85	2.2	1.730	0.01	0.44	30.98	4.2
APPROACH	30	4.0	0.600	0.04	0.66	11.37	2.0
IDLE	7	26.0	0.230	0.14	10.50	5.96	0.9
LTO TOTAL FUEL (kg) or EMISSIONS (g)			820	60	3979	14444	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				7	7	7	7
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.2	15.8	57.3	4.9
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.2	1.2	1.5	3.0
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.1-0.4	14.6-16.9	55.9-58.8	2.8-8.4

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100-102.9
TEMPERATURE (K)	275.5-280.3
ABS HUMIDITY (kg/kg)	0.0038-0.0062

### FUEL

SPEC	
H/C	1.97
AROM (%)	17.4

MANUFACTURER: Rolls-Royce plc  
 TEST ORGANIZATION: Rolls-Royce  
 TEST LOCATION: Derby  
 TEST DATES: 23/06/2005-24/06/2005

### REMARKS

1. Certification Report DNS 90543
2. EP Engine Standard

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)